Department of Environmental Conservation
Response to Comments

For

Donlin Gold Mine

POA-1995-120

Public Noticed June 13 – July 13, 2018

August 10, 2018

Alaska Department of Environmental Conservation (DEC)
Wastewater Discharge Authorization Program
555 Cordova Street
Anchorage, AK 99501

1 Introduction

1.1 Summary of Facility / Permit

Donlin Gold proposes the development of an open-pit, hard-rock gold mine in the Kuskokwim River watershed, 277 miles west of Anchorage, 145 miles northeast of Bethel, and 10 miles north of the community of Crooked Creek in the Kuskokwim watershed. There is no existing overland year-round access to the site, or a utility service to supply the mine.

The proposed Donlin Gold project includes land leased from Calista Corporation (Calista), The Kuskokwim Corporation (TKC) and CIRI Inc. All three are Alaska Native Claims Settlement Act (ANCSA) regional corporations. The remainder of potentially affected lands (principally pipeline impacts) are owned primarily by the State of Alaska or U.S. Bureau of Land Management (BLM).

A U.S. Army Corps of Engineers (USACE) permit pursuant to Section 10 of the River Harbors Act of 1899 (33 USC 403) and pursuant to Section 404 of the Clean Water Act (CWA) (33 USC 1344) is to be issued to Donlin Gold for the discharge of fill material into waters of the U.S. (WOUS), including wetlands, and the construction of structures in and under navigable waters. The USACE permit will authorize the Applicant's proposed action (Alternative 2 with North Option) which incorporates the North Route Pipeline option as detailed in the April 2018 Final Environmental Impact Statement (FEIS). This alternative incorporates all practicable avoidance and minimization measures.

To the extent practicable, the proposed project has been designed and modified to avoid impacts to WOUS and important cultural resources and wildlife habitats. The construction of all Project components (Mine Site, Transportation Corridor, and Pipeline) will result in the discharge of 4,368,300 cubic yards (cy) of fill material, permanently impacting 2,877 acres of wetland, 3 acres of fill below the below the Ordinary High Water Mark (OHWM) of the Kuskokwim River, and 172,944 linear feet of stream, and temporarily impacting 538 acres of wetland and 53,346 linear feet of stream.

The Project would have an average process throughput of 59,000 tons of ore per day, an estimated operational life of 27 years, and would produce approximately 30 million ounces of gold. Construction of the Project would take 3 to 4 years. Final reclamation and closure activities will take six years post operations. Approximately 45 years post-reclamation the mine pit will fill and there will be need for treatment in perpetuity of the wastewater discharged from the mine pit.

Major Project components include the proposed Mine Site, Transportation Corridor, and Pipeline. See the Donlin Gold FEIS, Section 2.3.2, Alternative 2 – Donlin Gold's Proposed Action with incorporation of the North Route Pipeline option (referred to as the Alternative 2 North Option) for a detailed description of the Project. The three major project components are summarized as follows:

<u>Mine Site</u>

The Mine Site construction will result in the discharge of 2,943,005 cy of fill material, resulting in the permanent loss of 2,572 acres of wetland and 171,100 linear feet of stream. The primary Project

subcomponents of the Mine Site include Donlin-Jungjuk road (East of Crooked Creek), Laydown areas, Mine Internal Roads, North and South Overburden Stockpile, Open Pit, Snow Gulch Freshwater Reservoir, Tailings Storage Facility (TSF), Treated Water Discharge Facility, Material sites and Stockpiles, and Waste Rock Facility (WRF).

Transportation Corridor

The Transportation Corridor construction will result in the discharge of 156,280 cy of material, resulting in the permanent impact to 105 acres of wetland, 3 acres below the OHWM of the Kuskokwim River, and 1,844 linear feet of stream. The primary Project subcomponents of the Transportation Corridor include a port facility at Angyaruaq (Jungjuk), a 30-mile mine access road from the port (West of Crooked Creek), a 5,000 foot airstrip, airstrip spur road, material sites.

Pipeline

The Pipeline construction will result in the discharge of 1,269,015 cy of material, resulting in the permanent loss of 200 acres of wetland and temporary impacts to 538 acres of wetland and 53,346 linear feet of stream. The Pipeline component includes the construction of a 14-inch-diameter steel Pipeline to transport natural gas approximately 316 miles from an existing 20-inch gas pipeline tie-in near Beluga, Alaska to the Mine Site power plant. Natural gas will be supplied to the Pipeline from existing Cook Inlet infrastructure. The Pipeline will require one compressor station at Milepost (MP) 0.4. An associated fiber optic line will be installed in the right-of-way (ROW) corridor parallel to the natural gas pipeline for operational needs and communications. The primary Project subcomponents of the Pipeline include access routes, airstrips, block valves, work camps, horizontal directional drill (HDD) workspace, material sites, pipeline storage yards, pipeline, water extraction sites, and work pads.

The permit requires compensatory mitigation for the direct impacts to WOUS, including wetlands.

Project Location: The Mine Site is located at Latitude 62.0179° N., Longitude 158.1884°W, 277-miles west of Anchorage and 10-miles north of Crooked Creek village. The river port (Jungjuk) is located on the north bank of the Kuskokwim River approximately 9-river miles south of Crooked Creek village at Latitude 61.7952° N, Longitude 158.2142° W. The Mine Site airstrip is located approximately 15.5-miles northwest of Crooked Creek village at Latitude 62.0319°N, Longitude 158.2351°W. The natural gas pipeline tie in near the community of Beluga at Latitude 61.2694° N Longitude 150.9017°W.

1.2 Opportunities for Public Participation

The Department of Environmental Conservation proposes to issue a Certificate of Reasonable Assurance in accordance with Section 401 of the Federal Clean Water Act (CWA) and Alaska Water Quality Standards (WQS) to Donlin Gold, LLC.

In July 2012, Donlin Gold submitted a CWA Section 404/10 preliminary permit application to the U.S. Army Corps of Engineers (Corps) for development of the Donlin Gold project. In response to the permit application, the Corps began preparing an EIS to fully evaluate and disclose impacts of the project in accordance with the National Environmental Policy Act (NEPA). The Corps conducted extensive public, agency, and tribal coordination during the NEPA process (refer to Corps Donlin Gold Project EIS webpage for additional information: http://www.donlingoldeis.com/Default.aspx)

The Department formally published a 30-day public notice of the intent to issue a Certificate of Reasonable Assurance in the Anchorage Daily News on June 13, 2018, and accepted comments until July

13, 2018. The Department received comments from eight interested parties, including five citizens and three non-governmental organizations (Earth Justice, Earthworks, and Center for Science in Public Participation).

This document summarizes the comments submitted and the justification for any action taken or not taken by DEC in response to the comments.

2 Comments on Policy and Section 401 Certificate of Reasonable Assurance Process

2.1 Comment Summary

A commenter expressed that it is not clear what the 401 certificate covers or how it interacts or overlaps other permits and other requirements (e.g., storm water pollution prevention plans [SWPPP] and best management practices [BMPs]).

Response

Section 401 of the federal CWA provides states with the legal authority to ensure that federal agencies will not issue permits or licenses that violate applicable water quality standards, or other applicable authorities, of a state or tribe through a process known as water quality certification. DEC reviews the project as described in the Corps project's public notice and other documents submitted to the department by the applicant; coordinates with other state and federal agencies and local governments; reviews any public comments; and either approves, approves with conditions, waives, or denies the certification based on compliance with the CWA, state water quality standards, and other applicable state laws. The Section 401 Certification can cover construction and operation of a proposed project. Conditions of the Section 401 Certification, if any, become conditions of the Federal permit or license.

The 401 Certificate of Reasonable Assurance to the Corps 404 permit (federal agency permitting activity) authorizing construction and operation of the Donlin Gold Mine as it applies to dredge and fill within waters of the U.S. Generally, wastewater discharge authorization permits do not overlap one another. Each permit authorizes a discrete discharge for the construction or operation of the project. Per CWA Section 402, the State of Alaska, Department of Environmental Conservation, Wastewater Discharge Authorization Program, Mining Section has also permitted the Donlin Gold Mine for discharges of effluent water (AK0055867) and proposed DEC Waste Management Permit, and the Multi-Sector General Permit (MSGP, AKR06AA92) authorization for storm water discharges. The applicant will also need to seek authorization under the Statewide Oil and Gas Pipeline general permit (AKG320000) for the pipeline segment of the project. Per the respective permit, storm water pollution prevention plans (SWPPPs) and best management practices (BMPs) are permit requirements for the permittee to develop and implement as means to manage the corresponding wastewater discharge. Other state permits are required by other agencies such as the Alaska Department of Fish and Game, and Alaska Department of Natural Resources, and Alaska Department of Environmental Conservation, Division of Air under their respective jurisdictions and authority.

2.2 Comment Summary

A commenter expressed that EPA regulations, consistent with the plain language of the CWA, require DEC to provide "reasonable assurance" that the entire "activity" - i.e., construction and operation of the mine - will not violate WQS. It is not sufficient to examine only the immediate fill material discharge authorized by the requested permit.

Response

See 2.1 Comment Response. The "activity" is described in greater detail in Block 18 – Nature of the Activity of the Department of the Army permit application that is associated with dredge and or fill. This includes the proposed mine area, transportation, and pipeline facilities. The intent of a FEIS is to disclose known or anticipated impacts, and communicate these issues to the public, tribes, and other governmental agencies. The FEIS, along with other information in the permit application and public agency comments, are used to inform the final 404 permit decision.

Subsequently, the 401 Certificate of Reasonable Assurance, is limited to and certifies that the direct activities authorized in the 404 permit will not violate the water quality standards, or other applicable authorities, of a state. The 401 Certification is not required to address issues outside of the scope of the 404 permit which will be addressed by other agencies and permitting programs.

2.3 Comment Summary

A commenter expressed that it is premature to issue a Section 401 certification at this point. DEC should wait until a Record of Decision has been issued to determine whether adequate mitigation measures will be put in place to addresses these risks.

Response

A complete application for a Department of the Army permit is designated by DEC as an application for State certification. The FEIS, along with other information in the permit application and public agency comments, are used to inform the final decision of the permit application. DEC coordinates with the Corps prior to issuance of the 401 Certificate and issuance of the Corps permit to resolve any significant issues. The 401 Certificate and any conditions specified in the certificate is incorporated into the U.S. Army Corps of Engineers permit as special conditions once it is issued (18 AAC 15.180).

2.4 Comment Summary

A commenter expressed that there are no mitigation measures that can accurately prevent impacts to water quality for a mine that will require water treatment in perpetuity to prevent downstream impacts.

Response

This is outside the scope of a 401 Certification, as the water treatment and its discharge is permitted under CWA Section 402. See comment 4.1. Waste prevention, reduction, and mitigation are measures to minimize impacts. Mitigation is one component of this hierarchy which is implemented and applied as part of a permit decision.

2.5 Comment Summary

A commenter expressed that the State should deny the 401 certification until a Supplemental EIS is commissioned and complete. The commenter expressed the current EIS does not fully or realistically analyze the risks to water of the US and is therefore, incomplete. With an incomplete analysis of risks, the mitigation suggested in the EIS are therefore also incomplete and potentially inadequate.

Response

As the lead agency, the Corps is responsible for conducting the environmental review under National Environmental Policy Act (NEPA) and making final decision of preferred alternative and whether a Supplemental EIS is warranted. Further, the intent of the EIS is to inform federal decision (i.e., the Corps 404 permit). The 401 Certificate of Reasonable Assurance is result of an analysis of the 404 permit's compliance with Alaska WQS, to which the analysis of risks and other information were evaluated and completed in the FEIS.

2.6 Comment Summary

The federal and state government should investigate a company's human rights and environmental practices allowing the company to operate.

Response

This concern is beyond the scope of consideration for issuance of a 401 Certification.

2.7 Comment Summary

DEC must have its own separate bond in place before a 401 certification can be issued. What type of budget does DEC have to make sure the 401 is carried out as permitted?

Response

The CWA and AS 46.03 do not require bonding for 401 Certifications or Alaska Pollutant Discharge Elimination System (APDES) permits. DEC required financial assurance for site closure and long-term maintenance, treatment, and monitoring is implemented through the Waste Management Permit under statutory and regulatory authorities AS 46.03.100, 18 AAC 60 and 18 AAC 72.

3 Comments on Tribal Consultation

3.1 Comments Summary

The permit and EIS information has not been properly distributed to tribal and non-tribal members who live along the Kuskokwim. There is a lack of information given that is understandable to our Yup'ik and Cup'ik speaking members. Donlin Gold and the State have not disseminated information to tribes in an effective and timely way.

Response

As the lead permitting agency, the Corps held 14 public scoping meetings and 17 public meetings for the Draft EIS. The Draft EIS public meetings had an open house component to allow the

public to talk with members of the EIS team and ask questions. Additionally, as described in the FEIS Section 6.3.5, the Corps provided:

- 20 EIS overview and update presentations to stakeholder groups,
- Monthly visits between August 2014 and October 2015 to the Yukon-Kuskokwim region to provide updates of the EIS process and discuss specific concerns and answer questions about the Project and EIS process.
- Seven newsletters to inform the public and let them know of opportunities for public participation,
- Translation of a Draft EIS summary into Yup'ik, and
- Scoping, Draft EIS, and Final EIS notifications in local newspapers and on KYUK.

Additionally, TKC and Calista, the regional corporations which own the surface and mineral rights, were active participants in the EIS process.

4 Comments on Long-Term Risk to Water Quality

4.1 Comment Summary

Several commenters expressed concern that the development of a large-scale mine that requires continual water treatment poses an unacceptable risk to the integrity of the downstream water quality in Crooked Creek throughout the life of the project and beyond.

Response

Continual water treatment after reclamation and closure will result in a discharge to Crooked Creek authorized by Alaska Pollutant Discharge Elimination System (APDES) permit (AK0055867) to meet WQS and is not part of this 401 certification of 404 permit activities. The water treatment plant discharge undergoes a permit renewal cycle every five years under the APDES permitting program to ensure compliance with WQS. As part of the permit renewal, the adequacy of post-closure water treatment plant technology would also be revaluated as effluent monitoring is conducted, and treatment technologies would be adjusted as necessary as a result of this evaluation. The pit lake is the primary source for the water treatment plant post operations of the mine site.

The Waste Management Plan (WMP) addresses long-term site management. Long-term management of the facility as proposed is not disallowed in State regulations.

4.2 Comment Summary

Operation of the mine would lead to violations of numeric state water quality standards for mercury, temperature, and arsenic, impair existing uses of streams for fish habitat, reduce streamflow, and damage rainbow smelt spawning areas. Therefore, there is no reasonable assurance that the project will not violate Alaska's WQS.

Response

Discharges at the Mine Site to Crooked Creek and its tributaries are subject to APDES permits and are not part of this 401 certification of the 404 permit activities. The APDES permits contain

effluent quality limitations that are protective of existing uses. Impacts to water quality during construction of the Transportation Corridor and Pipeline components will also be subject to APDES permits. As a mitigation measure, a Rainbow Smelt Monitoring Program (FEIS, Section 5.2) would establish baseline data with subsequent monitoring. If changes are attributed to Project related activities, Donlin Gold would implement an assessment of measures available or mitigate those activities. Such activities would be coordinated with the Donlin Advisory and Technical Review and Oversight Committee (DATROC) Subsistence Subcommittee. Flow impacts to Crooked Creek is also addressed as a component of the Aquatic Resources Monitoring Plan (ARMP, FEIS, Section 5.2). The ARMP for Crooked Creek is to be developed under the provisions of Title 16 fish habitat permits administered by Alaska Department of Fish and Game, and water use permits administered by Alaska Department of Natural Resources. The State has other means to address the commenter's issues outside the 401Cert but do pertain to water quality as explained above.

5 Comments on Potential Impacts on Fisheries

5.1 Comment Summary

Several commenters suggested that mine development, operations, and monitoring would adversely affect salmon, rainbow smelt and whitefish populations by altering their habitat and spawning areas.

Response

The project is highly location-dependent, as the geology of the region dictates the general location and dimension of the mine for the project, as the ore can only be developed where the mineral sources exist. Complete avoidance of surface water impacts is not possible if the project is to be completed. However, as proposed in selecting Alternative 2 and North Option of the FEIS, Donlin Gold has incorporated facility siting and transportation facility construction, operations, and closure procedures to avoid and minimize adverse impacts to wetlands and has committed to provide compensation for unavoidable wetland impacts. Wetland impact minimization was incorporated into the project design by reducing the construction footprint in areas near wetlands where avoidance was not practicable. A summary of the design features, standard permit conditions and best management practices (BMPs), and further additional measures proposed by the Corps and cooperating agencies listed as important in reducing impacts to wetlands is summarized in FEIS Chapter 3.11 Wetlands, Chapter 3.7 Water Quality, and further descriptions are provided in Chapter 5, Impact Avoidance, Minimization, and Mitigation.

Regulatory standards and criteria for the use of compensatory mitigation to offset unavoidable impacts to waters of the U.S., including wetlands, authorized under the CWA, were established in 2008, under 33 CFR 332 (Corps) and 40 CFR Part 230 (EPA). Compensatory mitigation for unavoidable impacts may be required to ensure that activities requiring a permit comply with Section 404(b)(1) Guidelines. Compensatory mitigation is the restoration (reestablishment or rehabilitation), establishment (creation), enhancement, and/or in certain circumstances preservation of aquatic resources to offset unavoidable adverse impacts. Compensatory mitigation

may be achieved by purchasing credits through mitigation banks or in-lieu fee programs, by permittee-responsible mitigation, or by a combination of the three.

The proposed activity is expected to result in a physical alteration to the surface waters in the Project area. Donlin Gold has proposed compensatory mitigation as a means to preserve existing uses. The FEIS has summarized alternatives to avoid and minimize adverse impacts to the surface waters.

Donlin Gold has developed a Compensatory Mitigation Plan (CMP) in coordination with federal, state, and local governments and landowners (FEIS, Appendix M). The CMP explains how Donlin Gold proposes to compensate for the unavoidable losses of waters of the United States (WOUS) including wetlands, streams, ponds, and creeks in the Donlin Gold Project Area. The State reviewed the compensatory mitigation plan and 404(b)(1) analysis and finds a reasonable assurance that the 404 permitted activities are consistent with Alaska WQS.

5.2 Comment Summary

Two commenters suggested that the reduced streamflow in Crooked Creek would have significant adverse effects on fish habitat, which would impair the existing uses of the creek.

Response

The Alaska Department of Natural Resources Division of Water (DNR-Water) and DEC coordinate outside 401 process in regards to water use permits. DNR-Water is responsible for managing water rights in the State and has the authority to render a decision on whether establishment of a minimum instream flow is necessary to comply with the Anadromous Fish Act (AS 16.05.871-.901) and the Fish Passage Act (AS 16.05.841). Donlin Gold has stated they recognize the concerns regarding predicted flow losses in Crooked Creek and they have engaged the appropriate State agencies to work within the State permit process to address this issue. Since stream flow changes will occur slowly over an extended period of time and unknowns exist, the Alaska Department of Fish and Game (ADF&G) has recommended Donlin Gold incorporate the establishment of a field monitoring program into their ADF&G application with provisions for making adaptive changes as needed to ensure the proper protection of aquatic resources in Crooked Creek (See Final EIS Section 5.2, Table 5.2-1, Design Feature #A33, Crooked Creek Substrate Freezing Monitoring and Subsequent Mitigation Plan).

6 Comments on Subsistence

6.1 Comment Summary

Three commenters suggested that the mine poses a direct threat to the subsistence lifestyle and the river communities' way of life.

Response

See comments 4.2, 5.1, and 5.2. In reviewing a proposed project for issuance of a 401 Certificate of Reasonable Assurance the Department does consider subsistence use and considers the WQS impacts as it relates to the designated uses for the waterbody. In addition, the Corps, through the development of the FEIS, conducted a significant number of household interviews and testimony

on traditional knowledge as the basis for understanding the contemporary subsistence way of life in the project area. The project design includes several mechanisms for regulating water quality to address potential issues that have been anticipated and addressed. The Corps received a similar comment in regards to subsistence as a way of life for residents on the Yukon-Kuskokwim (Y-K) region and those on the Bering Sea coast (See FEIS – Appendix X, Comment Analysis Report Section 2.40 Subsistence, SUB 1). The Department concurs with the Corps that it believes that the impacts analysis presented in Section 3.21.6, is sound and based on thorough consideration of the overlaps between project activities/impacts and subsistence resource habitats and subsistence use areas in open water and winter seasons, including increased barge activity at the Bethel Port. Spill impacts are examined in detail in Section 3.24, and mitigation measures are described in Chapter 5.

7 Comments on Spills

7.1 Comment Summary

One commenter expressed concern that the environmental review did not provide an assessment or modeling of what would happen if there were chemical or fuel spills in the Kuskokwim or a spill from an ocean barge carrying fuel in the mouth of the Kuskokwim or lower river.

Response

The risks associated with spills is regulated by a variety of federal, state, and international standards. The FEIS, Section 3.24 outlines the risks associated with potential spills of five substances proposed for use in the Donlin Gold Project: ultra-low sulfur diesel fuel (diesel) transported in barges, trucks, pipelines and stored in tanks; liquid natural gas (LNG) releases; mercury or cyanide release to the environment during transport; and tailings behind the tailings dam. Diesel storage, transportation, and distribution would be managed according to required plans like Oil Discharge and Prevention Contingency Plans (ODPCPs) and Facility Response Plans (FRPs). LNG is managed by the Pipeline and Hazardous Materials Safety Administration (PHMSA) regulations, cyanide by the International Cyanide Management Code and other state and federal agencies, and mercury by various federal regulations. The safety of the tailings dam would be under authority of the Alaska Department of Natural Resources (ADNR).

Nine spill scenarios are presented in Section 3.24.5 that summarize potential causes, behavior, and volumes of spills that could occur during the transport and storage of materials, as well as potential impacts to each resource (those analyzed in Sections 3.1 to 3.23) and responses. The scenarios are a representative example of the types of spills that could occur, and do not represent "worst case" possibilities. The focus is on high-consequence, low probability occurrences; the analysis considers a variety of accidental spill types. The impacts described are not part of the project design, but represent upset or system failure.

As part of the project design, Donlin proposes to minimize the risk of any spill regarding barges by limiting the season for shipping to the ice-free period on the Kuskokwim River and through the use of double-hulled barges; so that even if there is a collision or grounding, the likelihood of breaching diesel-containing compartments is much lower than for a single-hulled vessel.

The 401 Certificate of Reasonable Assurance also includes a condition for reporting of spills. Spills must be reported in accordance with Discharge Notification and Reporting Requirements (AS 46.03.755 and 18 AAC 75 Article 3). The applicant must contact by telephone the DEC Area Response Team for Central Alaska at (907) 269-3063 during work hours or 1-800-478-9300 after hours. Also, the applicant must contact by telephone the National Response Center at 1-800-424-8802.

7.2 Comment Summary

Two commenters claimed that the tailings breech risk assessment model presented in the EIS was inadequate because it suggested that 0.5 percent tailings breech was containable. One commenter asserted that the model should be based on actual spill data, which averages closer to 34 percent. Both commenters encouraged DEC to require the mine operator to completely remove the water from the tailings.

Response

This concern is in regards to a possible breach. Dam Safety is regulated under Alaska Dam Safety regulations and guidelines and is regulated by the Alaska Department of Natural Resources primarily under Alaska Statute 46.17 "Supervision of Safety of Dams and Reservoirs", and 11 AAC 93 "Dam Safety". DEC has also contacted DNR – Dam Safety in regards to this concern. The comment was also addressed in the USACE's Comment Analysis Report, April 2018 (DAM 4) regarding the comment summary: "The Corps should analyze a tailings dam failure scenario of 20 percent or more of the tailings, rather than the scenario analyzed in the Draft EIS."

DEC concurs with the USACE's response:

> "The scenarios presented in the document are from the early stage failure modes effects assessment (FMEA) and represent the most impactful of the scenarios that are not considered worst case. As described in Section 3.24.3.5.2 of the document, the early stage FMEA considered a variety of release scenarios, and found a partial tailings dam release to represent the most potentially impactful of the low probability-high consequence failure modes. Catastrophic worst-case failure was evaluated, and found to be very unlikely to occur, and not appropriate for the NEPA review process.
>
> The request for a new scenario of 20 percent of the contents does not appear to have any precedent in NEPA, nor is it that the scenarios presented in the document industry practice to analyze or plan for an arbitrary failure rate that loses 20 percent of the material retained by a dam.
>
> Emergency Action Plans will be required by the State of Alaska Dam Safety Program."

Removing the water from the tailings refers to Alternative 5A of the EIS, Alternative 5A would use the dry stack tailings method instead of the subaqueous tailings method that would be used under Alternative 2. Under alternative 5A, tailings would be dewatered in a filter plant using specialized equipment to produce a partially saturated, compactable filter cake. Alternative 5A was considered in detail in the EIS to examine the potential for reducing impacts to the WOUS, but the technology is not proven for mining operations at the planned throughput rate and was not selected as the preferred alternative.

8 Comments on Monitoring

8.1 Comment Summary

The mine operator cannot and must not be allowed to conduct their own testing. A third party must be contracted to do all the testing and reporting. Furthermore, the villages downriver must also have testing capability and the resources to respond in the event of any failure.

Response

Self reporting for compliance with permit monitoring requirements, combined with periodic regulatory inspection and data audits, is a hallmark of wastewater discharge permitting and management throughout the nation. Routine inspections and data audits assure data the permittee submits to comply with permit terms is accurate. In the rare cases the Department suspects the integrity of the reported data, it responds swiftly to resolve these issues with the permittee. Regarding the comment that suggests that, "villages downriver from the mine must also have testing capability and the resources to respond in the event of any failure," is beyond the jurisdiction of the 401 certification. Any concerned party can submit water test results or other data to the Department for consideration if an unexpected and observed impact to the environment or public health is discovered without these conditions being mandated in the 401 Certificate of Reasonable Assurance.

9 Comments on Groundwater Connectivity

9.1 Comment Summary

Three commenters suggested that the assessment of groundwater connectivity with the pit was inadequate, concern for predicting transport of contaminants at depth equal to the lowest point in the pit, and recommend DEC require the mine operator to better understand the movement of groundwater prior to allowing any acid generating rock to be stored in the pit.

Response

Section 3.6, Groundwater Hydrology of the FEIS provides an analysis of the groundwater hydrology of the Project, and includes an assessment of the model robustness and accuracy. The results of the model's calibration show that there is a match between model output and field observations is well within accepted groundwater industry standards, indicating that the model provides a reasonable representation at the project scale of the existing physical hydrogeologic system at the Mine Site.

Similar comments were previously submitted to the Corps in respect to the groundwater hydrology and are included in the FEIS Appendix X, Comment Analysis Report, Section 2-Groundwater Impacts, reference GRD #2 and #11. The Department concurs with the Corps Response (GRD #2) and finds that the well and pump tests provided for the model are adequate to characterize local and regional groundwater flow. As per the Corps response, the modeling confirmed that it is unlikely that additional or deeper water level or pumping test data would materially change the characterizations or assessments made or the reliability of the model predictions. Nevertheless, as the project develops additional boreholes (i.e., exploration and

geotechnical) will be drilled and hydrogeologic testing (e.g., dewatering well testing) will also be conducted; which the data will be used to provide future refinements to the Donlin Gold's water balance and water management practices. The groundwater flow model is a part of the overall site water management plan which is adopted by reference in the proposed DEC Waste Management Permit. This permit is re-evaluated every five years and includes a review of the updated water management plan.

Likewise, the DEC concurs with the Corps response (GRD #11) regarding transport of contaminants away from the pit. As per the Corps response, any regional flow system with the potential to transport contaminants away from the pit lake would have to exhibit water levels (or hydraulic head levels) in the aquifer below or adjacent to the pit lake lower than the maximum managed pit stage (or hydraulic head) of 331 ft above sea level. This is because water flows from areas of higher head to areas of lower head. At American or Crooked Creeks near the pit, for example, deep groundwater levels of 349 ft above sea level or higher were observed. Existing data and modeling results indicated that, with upward gradients, water levels (or hydraulic heads) would get higher at deeper levels. Should a regional flow system exist in this area with the potential to transport contaminants away from the pit lake, there would have to be a reversal of these gradients and hydraulic heads would need to exist that would be lower than 331 ft above sea level.

10 Comments on Mitigation Measures

10.1 Comment Summary

Several commenters recommended DEC require the mine operator to implement mitigation measures in the following areas:

- Groundwater hydrology and streamflow
- Fisheries
- Stream assessments
- Metal leaching
- Monitoring control stations
- Sampling and Analysis Plan
- Electrical leak detection survey
- Erosion and sediment controls
- Speed limits for barges

Response

Many of the recommended mitigation measures are outside the scope of the 401 certification or are part of the current Project design. DEC incorporated 11 additional mitigation measures into the 401 certification that address the spread of pollutants, erosion and sedimentation, which will be incorporated into the requirements of the Corps 404 permit.